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5 The present invention relates to plastic bags and more particularly to a plastic bag dispenser and manufacturing method thereof.

Petrochemical industry has been well developed during these several decades. Various products including many used in daily life are made from plastic. It brings a great convenience to people. One type of plastic product is plastic bag for containing objects. Plastic bags have many different shapes and sizes in implementation. Also, not only quality and appearance but also convenience and ergonomic design are factors under consideration in choosing a desired plastic bag by consumers. As such, there is a need for plastic bag manufacturers to fulfil such needs of consumers in order to survive in the competitive market.

In one implementation, for example, plastic bags are hung in a roll by a vegetable stand in supermarket. People may pull the plastic bag roll for a desired length prior to tearing one or more plastic bags therefrom. In fact, however, it is often that people may tear several plastic bags in one tearing, i.e., the number of removed plastic bags larger than the desired one. Further, opening of plastic bag is not easy to open. It really bothers consumers. Furthermore, unopened plastic bags are useless, i.e., it is a waste. Thus improvement exists.

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It is therefore an object of the present invention to provide a plastic bag dispenser comprising a parallelepiped container having an opening assembly on top, and a stack of a plurality of plastic bags received in the container each including an opening at a front side, a closed end at a rear side, two folded sections at both sides between the front and the rear sides wherein each folded section is folded symmetrically inward, and an adhesive on top near the opening of the bag for sticking to a next below bag wherein the closed ends are bent downward toward the openings of the bags so as to form a bent section at underside of the stack of plastic bags. In use, user can exert a small force to pull one bag from the container through the opening assembly without worrying of pulling two or more bags at one time since the adhesive force of adhesive is suitably small so that the adhesive force of adhesive only allows top halves of both folded sections and opening of the next below bag to be exposed on top of the container as folded sections of the next below bag being stopped in the opening assembly while one bag on the top being removed.

It is therefore an object of the present invention to provide a process of manufacturing a plastic bag dispenser, the process comprising the steps of (a) applying an adhesive on top of the bag near an opening thereof; (b) continuing step (a) until a predetermined plurality of bags have been processed; (c) stacking the bags with the openings thereof oriented the same for forming a stack of plastic bags; (d) bending closed ends of the bags downward toward the openings thereof so as to form a bent section at underside of the stack of plastic bags; and (e) placing the stack of plastic bags into a receiving space of a container through a top opening assembly of the container.

In one aspect of the present invention, the opening assembly comprises a widthwise opening near one side above the bent section, a central lengthwise opening extended from and perpendicular to the widthwise opening, and a flared

opening extended from the lengthwise opening to the position above the openings of the bags. In use, user pulls a top bag up by holding the opening thereof. Thus, the bag is exposed above container as it has been drawn from the flared, the lengthwise, and the widthwise openings. After the adhesive on the bag is disengaged from a next below bag, the bag has been completely removed with the opening in an open state. At this time, top halves of both folded sections and opening of the next below bag are exposed on top of container as folded sections of the next below bag being stopped in the lengthwise opening while one bag on the top being removed. User does not need to worry about pulling two or more bags at one time since the adhesive force of adhesive is suitably small.

The above and other objects, features and advantages of the present invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic perspective view of a stack of plastic bags placed in a paper container according to the invention;

FIG. 2 is a perspective view of several plastic bags partly disengaged;

FIG. 3 is a perspective view showing one bag on the top being removed from the paper container;

FIG. 4 is side view in part section showing one bag on the top being removed from the paper container;

FIG. 5 is a perspective view showing an almost removed plastic bag and a next plastic bag partly exposed on the paper container; and

FIG. 6 is a cross-sectional view showing an adhesive adhered between two adjacent plastic bags.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 and 2, there is shown a plastic bag dispenser comprising a parallelepiped paper container 1 and a stack of plastic bags 2 within the container 1 in accordance with the invention. The stack of plastic bags 2 consists of a plurality of plastic bags 20. Each bag 20 comprises an opening 201 at a front side, a closed end 202 at a rear side, two folded sections 203 at both sides between front and rear sides wherein each folded section 203 is folded symmetrically inward, and an adhesive 3 on top near opening 201 for sticking to a next below bag 20. Closed ends 202 are bent downward about 180 degrees toward openings 201 so as to form a bent section 21 at underside of the stack of plastic bags 2. On top of the container 1 there is provided an opening assembly comprising a widthwise opening 10 above bent section 21, a lengthwise opening 11 extended therefrom and perpendicular to widthwise opening 10, and a flared opening 12 extended from one end of lengthwise opening 11 (i.e., distal from the joint of widthwise opening 10 and lengthwise opening 11) to the position above openings 201 of the plastic bags.

Referring to FIGS. 3 to 5, the removing of a bag 20 from container 1 will now be described. First pull a bag 20 up by holding the opening 201 thereof through the flared opening 12 of the container 1. Thus, the bag 20 is exposed above container 1 as it has been drawn from flared opening 12, lengthwise opening 11 and widthwise opening 10 until the bag 20 is completely removed from widthwise opening 10 (i.e., disengaged from a next below bag 20 which is adhered to the immediately above bag 20 by the adhesive 3) with the opening 201 in an open state. At this time, top halves of both folded sections 203 and opening 201 of the next below bag 20 is exposed on top of container 1.

Referring to FIG. 6, adhesive 3 is applied onto an area on top of a bag 20 so

as to form a film after dried. The adhesive film is adhered to a next below bag 20. Consumer can exert a small force to pull one bag 20 from container 1 through the opening assembly without worrying of pulling two or more bags 20 at one time since the adhesive force of adhesive 3 on such small area is suitably small.

- 5 That is, the adhesive force of adhesive 3 only allows top halves of both folded sections 203 and opening 201 of the next below bag 20 to be exposed on top of container 1 as folded sections 203 of the next below bag 20 being stopped in lengthwise opening 11 while one bag on the top being removed.

Referring to FIGS. 1, 2, and 6 again, a manufacturing process of plastic bag dispenser according to the invention will now be described.

- 10 First, form a wrinkled area 204 on top of plastic bag 20 near opening 201 by performing a polarization treatment by means of a corona discharge device. Next, apply an amount about 2 mm³ of adhesive 3 on wrinkled area 204. Continue the above two steps until a predetermined plurality of bags 20 have been processed. Then stack the plurality of bags 20 with openings 201 of all bags 20 oriented the same direction for forming a stack of plastic bags 2. Next, bend about one third portion of the stack 2 from closed ends of the plastic bags 2 downward about 180 degrees toward openings 201 thereof so as to form a bent section 21 at underside of the stack of plastic bags 2. Then place the stack of plastic bags 2 into a receiving space of the container 1 which has an opening assembly on top comprising a widthwise opening 10 near one side above bent section 21, a central lengthwise opening 11 extended from and perpendicular to widthwise opening 10, and a flared opening 12 extended from one end of lengthwise opening 11 (i.e., distal from the joint of widthwise opening 10 and lengthwise opening 11) above the openings 201 of the plastic bags 2.

Moreover, a manufacturing process of plastic bags 20 comprises the following steps. First, pull a continuous tube like plastic film a predetermined

length from a source (not shown) wherein the plastic film has both sides being inward folded symmetrically. Next, melt and seal a rear side of the pulled plastic film by a sealing device for forming a closed end 202. Then cut the pulled plastic film from the source at the closed end 202 for forming a plastic bag 20. The
5 above three steps are repeated until a predetermined number of plastic bags 20 are manufactured. Each bag 20 comprises an opening 201 at a front side, a closed end 202 at a rear side, and two folded sections 203 at both sides between front and rear sides wherein each folded section 203 is folded symmetrically inward.

10 Referring to FIGS. 2 and 6 again, a forming of adhesive 3 on bag 20 will now be described. First, form a wrinkled area 204 on top of plastic bag 20 near opening 201 by performing a polarization treatment by means of a corona discharge device. Next, apply a predetermined amount of adhesive 3 on wrinkled area 204 so as to form a film after dried. Continue above two steps until
15 a predetermined plurality of bags 20 have been processed. Then stack the plurality of bags 20 with openings 201 of all bags 20 oriented the same and each bag 20 (except the last one) is adhered to a next below bag 20, thereby forming a stack of plastic bags 2. In use, consumer can exert a small force to pull one bag 20 from container 1 without worrying of pulling two or more bags 20 at one
20 time since the adhesive force of adhesive 3 on wrinkled area 204 is suitably small. That is, the adhesive force of adhesive 3 only allows top halves of both folded sections 203 and opening 201 of the next below bag 20 to be exposed as folded sections 203 of the next below bag 20 being stopped in lengthwise opening 11 while one bag 20 on the top being removed from the paper container.

25 While the invention has been described by means of specific embodiments, numerous modifications and variations could be made thereto by those skilled in the art without departing from the scope and spirit of the invention set forth in the

claims.

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